

Brief Communication: Gender and Sex: Vive la Difference

PHILLIP L. WALKER^{1*} AND DELLA COLLINS COOK²

¹Department of Anthropology, University of California, Santa Barbara, California 93106

²Department of Anthropology, Indiana University, Bloomington, Indiana 47405

KEY WORDS sex; gender; bioarcheology

ABSTRACT The distinction prevalent in the social sciences between the terms *sex* and *gender* is a useful one and ought to be preserved. *Sex* refers to the anatomical or chromosomal categories of male and female. *Gender* refers to socially constructed roles that are related to sex distinctions. Use of these terms as synonyms is becoming increasingly frequent in physical anthropology, especially among bioarchaeologists and primatologists. A failure to make the distinction between gender and sex is analytically incapacitating in a field such as physical anthropology, whose strength lies in the integration of biological and cultural information. *Am J Phys Anthropol* 106:255-259, 1998. © 1998 Wiley-Liss, Inc.

At first with mild amusement but now with growing concern, we have watched the loss of the distinction between the terms *gender* (an aspect of a person's social identity) and *sex* (a person's biological identity) in the pages of this and other scientific journals. The distinction between *gender* and *sex* is especially useful for biological anthropologists and is worth preserving. While the failure to distinguish clearly between these terms may have little effect in some disciplines, it is analytically incapacitating in a field such as biological anthropology. The strength of our field lies in the integration of biological and cultural information, and we must communicate with colleagues who use these terms in several distinct technical senses. This problem is analogous in many ways to the conceptual difficulties that arise when people confuse culture and biology in the term *race*.

In ordinary English discourse, *gender* has been used as a synonym for *sex*, with secondary and often humorous intent, since at least 1387 (*Oxford English Dictionary* [OED], 1989:100), but the two words have quite different etymologies. *Gender* is from the Latin word *genus*, meaning kind or race, whereas *sex* is from the Latin *sexus*, "either

of two divisions of organic nature distinguished as male or female respectively" (OED, 1971:578). *Gender* is derived from Indo-European roots related to kinship, as in *generation*, *gene*, and *gentile*; it refers to a system of classification in which there may be many categories. *Sex* is derived from Indo-European roots related to separation, as in *sect* or *dissect*; it refers to dichotomous relationships in which two categories are divided one from another (Shipley, 1945). The loss of distinction between the terms has been variously lamented and abetted by grammar mavens in the recent past (see Steinmetz, 1991).

It is in technical English that distinctions between *sex* and *gender* become most problematic. On the one hand, among our colleagues in linguistics, *gender* refers to "a set of mutually exclusive kinds into which a language categorizes its nouns and pronouns" (Pinker, 1994:476). English is unusual in the degeneracy of this system. The notion that *sex* and *gender* are synonymous

*Correspondence to: Phillip L. Walker, Department of Anthropology, University of California, Santa Barbara, CA 93106. E-mail: walker@sscf.ucsb.edu

Received 4 September 1997; accepted 25 February 1998.

would not arise in the mind of, for example, a speaker of German. The kinds of nouns may have nothing to do with sex, as in many Amerindian languages, where animate and inanimate beings are distinguished through gender distinctions (Pinker, 1994). On the other hand, some social anthropologists make a distinction between sex, a biological given, and gender, a cultural construct not at all limited to two kinds (Ortner and Whitehead, 1981; Herdt, 1994). Other social and biological anthropologists seem only dimly aware of this technical distinction and use the terms *gender* and *sex* as equivalents or preferentially use one term (usually *gender*) because of the desirable social connotations doing so has to them. This last usage nicely fits the definition of what Elman Service (1969) called "mouthtalk": words used to advertise the *speaker's* social identity instead of to communicate about the matter at hand. Thus, for those of us in anthropology departments, in a walk down the hall we may cross several frontiers in the use of the terms *sex* and *gender*.

To some, the substitution of *gender* for *sex* might seem a harmless way of emphasizing the extent to which the gender roles that males or females assume are social constructs. This well-intentioned desire to emphasize the social influences on our sexual identities is misguided. Without the distinction between gender and sex, studying gender roles in ancient societies becomes a virtual impossibility. The sex/gender distinction is especially important in bioarchaeology, since it is possible to determine sex through skeletal studies and obtain information on gender roles through artifact analyses. Bioarchaeological studies of gender are exciting because they promise to provide information on similarities and differences among societies in the evolution of gender roles. We are aware of only one attempt at attaching cultural meaning to sex/gender discordance in ancient burials (Roscoe, 1991), an intriguing suggestion that these individuals represent a third gender in the ancient Southwest. A search for similar examples in native Californian remains was disappointingly unproductive (Hollimon, 1990). With the development of better techniques for extracting DNA from ancient bone, it may someday be

possible to explore the relationship between the gender roles that people assumed and the full range of sex chromosome configurations found in human populations.

The term *gender* began to be commonly used in the biomedical literature in the early 1970s by researchers interested in the relationship between a person's sex as indicated by his or her karyotype and the person's social identity. Since then, there has been a steady spread in the use of the term *gender* throughout biology (Table 1; Fig. 1). Some of this reflects a growing interest in the extent to which genetic and environmental variables influence gender roles. However, much of the recent popularity of the term *gender* appears to reflect a lack of understanding of the significance of the sex/gender distinction. With increasing frequency, *gender* is being used to refer to an animal's biological identity (in other words, its sex). It is common, for example, to find papers in which the genders of rats and monkeys are discussed in physiological or histological studies having nothing to do with social identity. In other cases, the terms *gender* and *sex* are used as equivalents by authors who appear to substitute one for the other simply as a stylistic device to avoid repetition. Use of the term *gender* for animals seems to be particularly prevalent in works on social behavior, where we discover that dogs (Serpell, 1996) and horses (Boyd and Houpt, 1994) have gender.

A review of the use of the terms *gender* and *sex* in the biomedical literature included in the Medline Plus database between 1966 and 1997 reveals some interesting differences between physical anthropologists and other researchers (Table 1). Only 2% of the biomedical literature as a whole is indexed with *sex* as a key word. This contrasts markedly with the *American Journal of Physical Anthropology*, in which 23% of articles are indexed on sex. There has been considerable feminist criticism of the absence of women as subjects of biomedical study (Fausto-Sterling, 1985), a problem that does not seem to afflict physical anthropology. Clearly, research on sex differences is of much greater interest to the physical anthropologists than to other researchers.

TABLE 1. Growth in the use of the term gender in the biomedical literature

	Year of publication						Total
	1966–1974	1975–1979	1980–1984	1985–1989	1990–1992	1993–1997	
All References in Medline							
Total number of articles	1,986,470	1,256,600	1,388,925	1,749,735	1,129,618	1,659,431	9,170,779
Gender a key word							
N	87	995	1,746	3,806	4,813	12,231	23,678
%	0.004	0.079	0.126	0.218	0.426	0.737	0.258
Sex a key word							
N	45,463	32,208	34,642	41,953	31,363	50,322	235,951
%	2.289	2.563	2.494	2.398	2.776	3.032	2.573
Both sex and gender a key word							
N	59	613	864	1,655	1,886	5,026	10,103
%	0.003	0.049	0.062	0.095	0.167	0.303	0.110
Gender/sex ratio	0.002	0.031	0.050	0.091	0.153	0.243	0.100
American Journal of Physical Anthropology							
Total number of articles	767	493	507	571	318	525	3,181
Gender a key word							
N	0	0	1	5	6	8	20
%	0.000	0.000	0.197	0.876	1.887	1.524	0.629
Sex a key word							
N	175	121	128	104	100	142	770
%	22.816	24.544	25.247	18.214	31.447	27.048	24.206
Both sex and gender a key word							
N	0	0	1	1	6	7	15
%	0.000	0.000	0.197	0.175	1.887	1.333	0.472
Gender/sex ratio	0.000	0.000	0.008	0.048	0.060	0.056	0.026

Physical anthropology is similar to other biological sciences in that the proportion of articles indexed on sex has not changed appreciably during the past 30 years (Fig. 2; Table 1). In contrast, the frequency of articles indexed on gender has increased markedly in all disciplines and especially since the early 1980s. Although the sample of physical anthropological articles is small, it also appears that use of the term *gender* has grown in our discipline at a rate similar to the 50% per year increase seen in other areas of biological research.

A closer examination of how *gender* is used in the physical anthropological and biomedical literature is disheartening. Since articles in which a useful distinction is made between sex and gender are likely to be indexed on both terms, we examined the use of gender in a sample of such articles (Table 2). Almost all articles dating from the period

1966–1974, when researchers first became interested in the relationship between sex and gender, make a useful distinction between the terms. Gender is used as the equivalent of sex in less than 4% of these articles. Although there has been steady increase in the misuse of gender from the mid-1970s onward, the situation has deteriorated markedly during the last 10 years. Currently, more than half the articles indexed on both terms fail to exploit the difference in their meaning. Unfortunately, physical anthropologists are among the worst offenders. None of the articles indexed on both terms that have been published in the *American Journal of Physical Anthropology* during the past decade make a useful distinction between gender and sex.

Why are we in this muddle? A look at abstracts of the annual meeting of the American Association of Physical Anthropologists

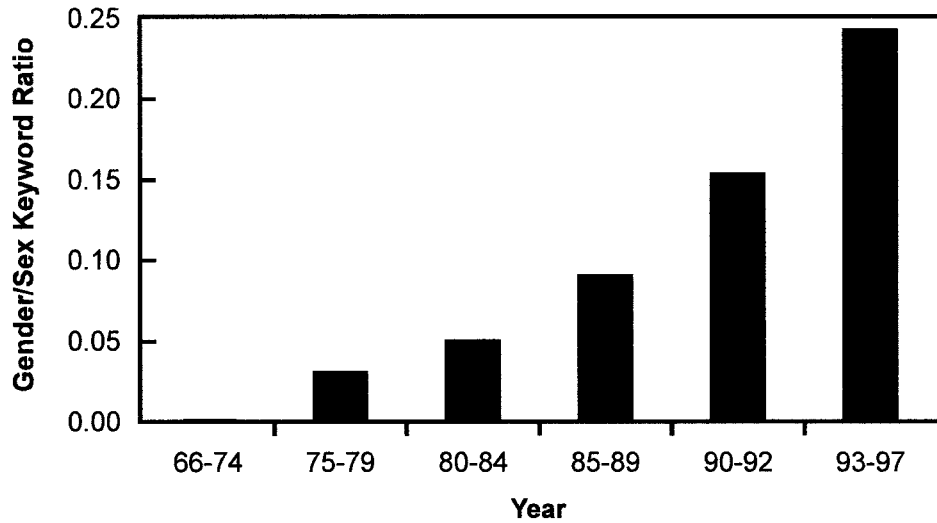


Fig. 1. Growth in the use of the term *gender* in the biomedical literature expressed as a ratio of the number of articles indexed on gender to those indexed on sex in the Medline database.

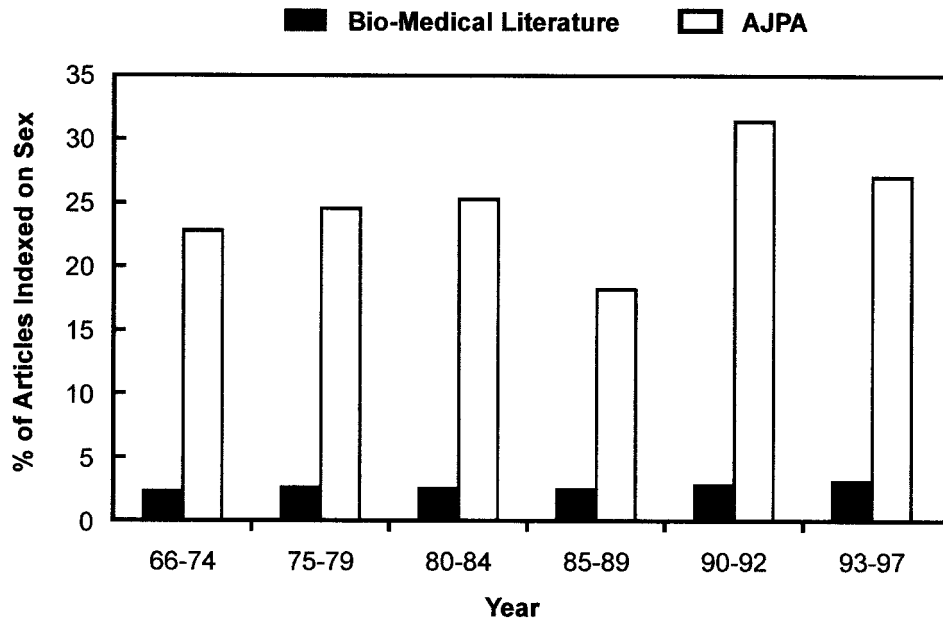


Fig. 2. Changes in the proportion of articles indexed on the word *sex* in Medline database for the biomedical literature as a whole (all Medline articles) and the *American Journal of Physical Anthropology* (AJPA).

for 1995 is instructive, because in abstracts the author's linguistic creativity is unfettered by the efforts of curmudgeonly editorial voices such as ours. The use of the term *gender* is largely restricted to two subject

areas: primate behavior and bioarcheology. Students of primate behavior are probably responding to the usage trend among behavioral biologists. At the AAPA meetings, baboons have become quite genderified. Bioar-

TABLE 2. Use of Sex and Gender as equivalent terms in Medline articles indexed on both sex and gender

	Year of publication				
	1966–1974	1975–1979	1980–1984	1985–1989	1990–1995
Number of titles examined	59	50	100	56	53
Sex and gender used as equivalents					
N	2	5	15	25	30
%	3.39	10.00	15.00	44.64	56.60

cheologists are perhaps more likely to interact with social constructionists than are other physical anthropologists because of their role in integrating biological information into reconstructions of past social behavior. Unfortunately, many of us have absorbed only a part of the new technical language in social anthropology, although we note that several recent abstracts have made an appropriate distinction between gender and sex (e.g., Akins, 1995; Grauer and McNamara, 1995). It is surprising how frequently the terms are avoided in AAPA abstracts; often subjects are referred to simply as males and females or boys and girls.

It is doubly unfortunate that two recent handbooks of skeletal biology refer to what one determines by looking at a pubis or a mastoid process as gender (Buikstra and Ubelaker, 1994; Steele and Bramblett, 1988). We must brace ourselves for a generation of students who consider *sex* and *gender* synonyms in the technical language of bioarchaeology.

In biological research on experimental animals, substitution of gender for sex is comparatively benign since the rat's social identity is clearly irrelevant to the research that is being described. In many areas of physical anthropological research, and especially in bioarchaeology, maintaining this distinction is important because it makes it possible to explore the relationship between the biological and social forces that shape human behavior. Failure to make a distinction between gender and sex will seriously

hobble communication with other branches of our discipline. *Vive la difference!*

LITERATURE CITED

- Akins NJ (1995) Contrasting gender adaptation in the Galisteo and San Juan Basins of New Mexico. *Am. J. Phys. Anthropol.* 20 (Supp.):56.
- Boyd L, and Houpt KA (1994) Przewalski's Horse: The History and Biology of an Endangered Species. Albany: State University of New York Press.
- Buikstra JE, and Ubelaker DH (1994) Standards for Data Collection from Human Skeletal Remains. Fayetteville, AR: Arkansas Archeological Survey Research Series No. 44.
- Fausto-Sterling A (1985) *Myths of Gender: Biological Theories about Women and Men*. New York: Basic Books.
- Grauer A, and McNamara EM (1995) Health, disease and gender in a 19th century poorhouse population. *Am. J. Phys. Anthropol.* 20 (Supp):101.
- Herd G (1994) *Third Sex, Third Gender: Beyond Sexual Dimorphism in Culture and History*. New York: Zone.
- Hollimon, SE (1990) Division of Labor and Gender Roles in Santa Barbara Channel Area Prehistory. Ph.D. dissertation, University of California, Santa Barbara. Ann Arbor: University Microfilms.
- Ortner SB, and Whitehead H (1981) *Sexual Meanings: The Cultural Construction of Gender and Sexuality*. New York: Cambridge.
- Oxford English Dictionary, Compact Edition (1971) New York: Oxford University Press.
- Pinker S (1994) *The Language Instinct: How the Mind Creates Language*. New York: William Morrow.
- Roscoe W (1991) *The Zuni Man-Woman*. Albuquerque: University of New Mexico Press.
- Serpell J (1996) *The Domestic Dog: Its Evolution, Behaviour, and Interactions with People*. New York: Cambridge.
- Service ER (1969) Models for the methodology of mouth-talk. *Southwestern Journal of Anthropology* 25:68–80.
- Shipley JT (1945) *Dictionary of Word Origins*. New York: Philosophical Library.
- Steele DG, and Bramblett CA (1988) *The Anatomy and Biology of the Human Skeleton*. College Station: Texas A&M Press.
- Steinmetz S (1991) Dictionaries recognize 'gender' for 'sex.' *New York Times* Jan. 18, page A30.